BLUMIND

AI for Everyone, Everywhere

Application Brief

All-analog AI Smoke Detectors

Always on AI Smoke Detectors

Smoke detectors save lives, but they are one of the most infuriating home sensors. Chirping at 3 a.m. for new batteries, resetting alarms or changing batteries by standing on a chair or stepladder to access the ceiling mounted product are just some of the pain points. Imaging an always-on energy harvesting/battery power detector that supports AI voice commands for control, and you never have to change the battery, but only if the power is low enough. Blumind's AMPL™ all-analog AI solution uses low-cost standard CMOS that delivers a low-latency, small, cost-effective, and ultra-low power solution. (see side bar). Local processing of multiple voice commands and sensor time series data are just a few of the value-added features that Blumind can enable in next generation smoke detectors.

Integrated solution

Blumind holistic approach achieves the highest total system value for clients. We consider system level power, size, and cost to achieve the most efficient solution. For smoke detector solutions our all-analog approach reduces system power up to 20x and no battery-bay or test/reset button saves costs.

Ease of Deployment

Blumind offers high integration ASSP devices and Chiplet/IP solutions for system-in-package integration options. Our products use standard software tool flows for our all-analog architecture without compromising accuracy of results. Contact us to find our more.

Blumind AMPL™ Technology

Blumind's AMPL technology is unique. The Blumind all-analog approach delivers the lowest power solution while the inherently parallel architecture delivers ultra-low latency for real time applications, all in a tiny footprint.

No high-speed clocks, ADCs, DACs, or specialty memory are used. AMPL technology is built in standard advance CMOS with a roadmap to advanced process node.

By exploiting advanced CMOS device physics Blumind create single transistor neurons that are small and power efficient.

The AMPL architecture was built from the ground up to address analog compute challenges of variations in process, temperature, voltage, and long-term drift and our results are impressive.

Standard PyTorch and TensorFlow software tools are used to create the parameters for the powerful AMPL neural network.